

A QUEENSLAND FOSSIL AMPHIBIAN.

BY H. A. LONGMAN (DIRECTOR).

(Plate V.)

With Notes by F. W. Whitehouse, Ph.D., D.Sc., on the Age of the Beds.

A small fragment of bone discovered by Mr. John Wadley in the sandstones on the Brisbane River, below Lowood, is of unusual interest as it represents the first vertebrate remains to be found in these extensive deposits. The writer has at times searched over large areas of these sandstones, hoping for signs of vertebrate remains, but without success. It is pleasant to pay a tribute to Mr. Wadley's enthusiasm, to which this discovery is due. Persistent searching by him in the same locality, however, has failed to reveal additional material, although further attempts will be made.

The actual spot in which the fragment was found in situ was in the bed of the Brisbane River nearly a mile below Lowood Station and near the flood gauge.

The fragment was embedded in a large mass of sandstone, and the smooth surface exposed resembled portion of a rib. When this was carefully removed from the matrix, however, the hidden contours proved significant and the fragment was found to be portion of an amphibian jaw. The rib-like exposed surface proved to be the oral border. The dorsal aspect of the fragment showed characteristic sculpturing, whilst the flat lower surface contained the abraded remains of twenty alveoli.

AUSTROPELOR WADLEYI, genus and species new.

The fragment as exposed consists of three conjoined pieces. The maximum length is 99 mm., breadth 28 mm., and the dorso-ventral thickness 25 mm. Evidently the fragment was partly macerated before fossilisation, as all the teeth are lost. Even the body of the fragment is somewhat abraded, and it is most unfortunate that the alveolar cavities give no evidence of the actual teeth.

The alveoli are small and closely set, with a maximum diameter of 4 mm. The fragment is considered to be from the right side of the upper jaw, and it obviously represents only a small section of the dental arcade.

Figure 1 of Plate V shows the lower surface of this maxillary fragment with the somewhat obscure alveoli. Figure 2 gives a supero-lateral aspect, the fragment being tilted to show the external or labial surface and the abraded sculpturing of the cranial roof.

The outer surface, although abraded, shows two prominent straight grooves. One of these is situated on the labial border and occupies most of its area. The second, which is not so prominent, is on the upper surface adjoining the lateral border and running parallel to it. Both these grooves are quite shallow anteriorly, where they are merged in the plane of the less prominent sculpturing. They apparently correspond with lateral portions of the lyrate system of mucous or sensory canals between the orbits and narial openings which are characteristic of many Stegocephalians (*Mastodonsaurus*, *Capitosaurus*, *Lyrocephalus*, *Trematosaurus*, etc.). From the published researches of A. P. Bystrow, G. Save-Soderbergh, F. Broili and J. Schröder and others it is evident that considerable significance may be attached to the structure of these lateral line canals in well-preserved crania. Although so fragmentary, the evidence for canals in the Lowood fossil seems to be definite, but no precise comparisons can be made between it and well-known genera.

The labial groove, which appears to have a distinctive feature, is relatively deep and is almost V-shaped in section at its strongest development. If placed in a reversed position, the fossil might be interpreted as a fragment from the left maxilla, and the grooves would then be seen as becoming gradually merged in the posterior and not the anterior plane of the surface.

On the median border of the upper surface the contours are disrupted for two-thirds of the length where the fragment was broken off from the cranial roof. The remaining third presents a smooth surface which apparently represents the narial opening. The choanae may have been of the somewhat elongated type figured by F. Broili and J. Schröder in their reconstruction of *Capitosaurus haughtoni*.¹

The actual curve of the fragment suggests an arc with a radius of twenty inches. The cranial contours of fossil amphibia, ranging from elongated to triangular or almost circular outlines, are too variable to postulate the shape of the head from so small a fragment. It is obvious, however, that this Lowood fossil represents a very large species. It is suggested that a complete adult skull would be about two feet in length.

Austropelor wadleyi is tentatively placed in the Family Capitosauridae of the Stegocephali. Reg. No. F. 2628. Type fragment in Queensland Museum.

The bone was exhibited at a meeting of the Royal Society of Queensland on 26th June, 1940.

Previous Records.—Very few fossil amphibians have been found in Australia.

Bothriceps australis from the Hawkesbury beds of New South Wales was described by Huxley in 1859.² A second species *Bothriceps major*, from Airly, N.S.W., was subsequently recorded by A. Smith Woodward.³

¹ F. Broili u. J. Schröder, 1937, Sitz. der Bayer. Ak. Wiss., München, Heft 11, p. 111.

² Huxley, 1859, Quart. Journ. Geol. Soc., Vol. XV, p. 647.

³ A. Smith Woodward, 1909, Rec. Geol. Surv., N.S.W., Vol. VIII, pp. 317-319.

In 1886 the late Professor W. J. Stephens recorded a pectoral plate from Cockatoo Island, which he tentatively associated with *Mastodonsaurus*. He also described *Platyceps wilkinsoni*, a "Baby Labyrinthodont" from the Hawkesbury Series near Gosford.⁴

The most significant labyrinthodont remains yet discovered in Australia were secured by the late B. Dunstan, Queensland Government Geologist, from St. Peters quarry, near Sydney, N.S.W., Wianamatta shales. This very large specimen was sent to London. In a brief comment D. M. S. Watson notes that this labyrinthodont "is, so far as can be seen from a short inspection, a typical *Cyclotosaurus* which marks a definite evolutionary stage of the *Stereospondyli*, always of Upper Triassic age in Europe."⁵

Age.—I am greatly indebted to Dr. F. W. Whitehouse, Hon. Palaeontologist, for the following notes:—

THE AGE OF THE BONE-BEARING SANDSTONE AT LOWOOD.

By F. W. WHITEHOUSE, Ph.D., D.Sc.

"In south-eastern Queensland there is a very extensive development of Mesozoic sediments that fall naturally into several series. The nomenclature of these at present is slightly involved since there has been a progressive subdivision of earlier-named groups sometimes without a clear statement of what restriction a later author had intended for the older names. A full discussion and analysis of these things will be given by the writer in a forthcoming publication. Meanwhile the following stratigraphical succession expresses best the progression locally from the early Triassic or even late Permian (Kinbombi Series) to the Aptian division of the Lower Cretaceous (Roma Series).

- Roma Series (Whitehouse 1926).
- Blythesdale Series (Jack 1895).
- Walloon Series (Cameron 1907).
- Marburg Series (Reid 1921).
- Bundamba Series (Cameron 1907).
- Ipswich Series (Jack 1886).
- Esk Series (Reid 1923).
- Kinbombi Series (Reid 1925).

"The bone-bearing sandstone occurs in beds that have been mapped by Mr. J. H. Reid* as the Marburg Series—that is a little above the middle of this sedimentary column. The latest series (the Roma Series) alone is of marine origin and has a rich Aptian fauna. The Blythesdale flora is rich but undescribed, probably of lowest Cretaceous (pre-Aptian) age.

⁴ W. J. Stephens, 1886, Pr. Linn. Soc., N.S.W., Vol. I (2), pp. 931-940; loc. cit pp. 1175-1192, and 1887, Vol. II (2), pp. 156-158.

⁵ D. M. S. Watson, 1918. Rep. Brit. Ann. Ad. Sci., 1917, p. 115.

* Reid, J. H. 1921. "Geology of the Walloon-Rosewood Coalfield." *Qd. Govt. Mining J.*, XXII, p. 224.

“Only one species of plant (a giant *Nilssonia*) is known in the Kinbombi Series which mainly is a group of andesitic boulder beds. The Esk and Ipswich Series have wonderfully rich Triassic floras as well as abundant insect faunas. In earlier times, by comparison with Europe (where Triassic beds earlier than the Rhaetic are almost barren of plants), the flora of the Ipswich Series was regarded as Rhaetic. But now, when here in Queensland we know of rich floras almost continuously downwards to the Permian, the basis of such a definite age determination is open to question. However, judging from stratal thicknesses and by comparison with the African and Argentine floral evidence, the Esk and Ipswich Series together must continue the succession upwards to near the top of the Triassic.

“Between these Triassic and Cretaceous groups lie the three series, the Bundamba, Marburg and Walloon, with very few species of plants. In an outlier of what appears to be the Bundamba Series at Durikai is a *Sagenopteris* flora (*Sagenopteris rhoifolia* Presl. sp., *Otozamites feistmanteli* Zigno, and *Phlebopteris alethopteroides* Eth. fil.), definitely Jurassic. The described floras of the Walloon and Marburg Series (in their restricted senses) are very meagre although, near Bymount in the western regions, there is a very rich undescribed flora of the Walloon. Until this and certain other floras (of the Blythesdale Series most notably) are described a definite age pronouncement would be premature. Sufficient it is to say that these three series (Bundamba, Marburg and Walloon) are Jurassic in age and that the Marburg Series which has this bone bed may be placed tentatively about the middle of the period.

“It may be appropriate to record that it is in the succeeding series (the Walloon) that the most striking evidences of vertebrate life in our lacustrine Mesozoic beds has been obtained—the dinosaur *Rhoetosaurus brownei* Longman from Durham Downs north of Roma, and the abundant dinosaur footprints in a coal mine at Lanefield. All four non-marine series, from Bundamba to Blythesdale, cover an enormous area in Queensland, outcropping as a continuous eastern, marginal fringe to the Great Artesian Basin. Except for the Blythesdale Series they occur also in smaller basins nearer the coast. There is considerable promise therefore of future discoveries of Jurassic and early Cretaceous land and fresh-water vertebrates in Queensland.

“For purposes of comparison it may be well to record that the Mesozoic sediments of the Sydney area with several described vertebrates (the Narrabeen, Hawkesbury and Wianamatta Series) are all Triassic and so are earlier than the bone bed at Lowood.”